WHAT IS CLAIMED IS:

1. A microanalysis chip comprising a body defining at least one transfer-separation channel including a channel bottom having a bottom opening, the transfer-separation channel terminating in a discharge aperture.

2. The microanalysis chip of claim 1 further comprising a seal member positioned against a bottom surface of the body.

3. The microanalysis chip of claim 1 wherein the bottom opening forms a well.

4. The microanalysis chip of claim 1 wherein the bottom opening comprises a passive valve.

5. The microanalysis chip of claim 1 further comprising a reservoir in the body and a reagent fluid in the reservoir.

6. The microanalysis chip of claim 1 comprising a plurality of the transfer-separation channels.

7. The microanalysis chip of claim 1 wherein the bottom opening is cooperatively structured to receive a pillar of a sample chip.

8. The microanalysis chip of claim 1 wherein the body comprises one of silicon, glass, or polymeric materials.

9. The microanalysis chip of claim 1 further comprising a reservoir and a reagent adapted to process proteins contained in the reservoir.

10. The microanalysis chip of claim 1 further comprising a fluid distribution network.

11. The microanalysis chip of claim 1 further comprising a nozzle containing the discharge aperture.

12. The microanalysis chip of claim 1 wherein the at least one transfer-separation channel is positioned within the body.

13. The microanalysis chip of claim 1 further comprising a chromatography/retention zone downstream of the bottom opening.

14. The microanalysis chip of claim 1 further comprising a lid and a nozzle, wherein the lid has a nozzle.

15. A method for chemically affecting a sample comprising:

providing a microanalysis chip including a body having a transfer-separation channel with a channel bottom having a bottom opening;

inserting a pillar into the bottom opening such that a sample supported by the pillar communicates with the transfer-separation channel; and

passing a reagent fluid into the transfer-separation channel in order for the reagent fluid to come in contact with the sample to chemically affect the sample.

16. The method of claim 15 wherein the pillar is on a base.

17. The method of claim 16 further comprising:

sealing a region between the microanalysis chip and the base with a seal member.

18. A dispenser assembly comprising:

a dispenser chip including a dispenser body including a vertical channel; and

a sample chip having a base and a sample structure, the sample structure comprising a pillar and a sample surface, wherein the vertical channel of the dispenser chip is cooperatively structured to receive the pillar.

19. The dispenser assembly of claim 19 further comprising:

a seal member between the dispenser body and the base of the sample chip.

20. A microfluidic chip comprising:

a body having a bottom surface;

a plurality of discharge apertures; and

a plurality of transfer-separation channels in the body, each transfer-separation channel defined by a channel bottom with a bottom opening, and

having a portion upstream of the bottom opening and a portion downstream of bottom opening, and wherein each transfer-separation channel terminates at one of the discharge apertures.

21. The microfluidic chip of claim 20 further comprising: a plurality of reservoirs coupled to the transfer-separation channels.

22. The microfluidic chip of claim 20 further comprising: a plurality of reservoirs; and a plurality of delivery channels upstream of the plurality of transfer-separation channels.

23. The microfluidic chip of claim 20 further comprising:. a plurality of nozzles, each nozzle containing one of the discharge apertures.

24. The microfluidic chip of claim 20 further comprising: a lid having a plurality of nozzles, each nozzle containing one of the discharge apertures.

25. The microfluidic chip of claim 20 wherein the bottom opening includes a passive valve.

26. The microfluidic chip of claim 20 wherein each transfer-separation channel comprises a concentration/chromatography zone in the portion of the transfer-separation channel downstream of the opening.

27. The microfluidic chip of claim 26 wherein the discharge apertures are at a top surface of the microfluidic chip.

28. A microfluidic assembly comprising: a microfluidic chip comprising (i) a body having a bottom surface, (ii) a plurality of discharge apertures, and (iii) a plurality of transfer-separation channels in the body, each transfer-separation channel defined by a channel bottom with a bottom opening, and having a portion upstream of the bottom opening and a portion downstream of bottom opening, and wherein each transfer-separation channel terminates at one of the discharge apertures; and

a sample chip comprising a base including a non-sample surface and a plurality of sample structures, each sample structure including a sample surface.

29. The microfluidic assembly of claim 28 wherein the sample surfaces are elevated with respect to the non-sample surface.

30. The microfluidic assembly of claim 28 wherein each sample structure comprises a pillar, wherein the sample surface is on the pillar.

31. The microfluidic assembly of claim 28 wherein the bottom opening comprises a passive valve.

32. The microfluidic assembly of claim 28 further comprising:

a seal between the microfluidic chip and the sample chip.

33. The microfluidic assembly of claim 28 wherein the microfluidic chip further comprises:

a plurality of reservoirs, each reservoir containing a reagent;

a plurality of delivery channels coupled to the plurality of reservoirs; and

a distribution network of fluid channels coupled to the plurality of delivery channels.

34. A method of processing an analyte, the method comprising:

processing an analyte on a sample surface on an sample chip;

transferring the processed analyte through a transfer-separation downstream of the sample surface, wherein the transfer-separation channel is in a microfluidic chip above the sample chip; and

analyzing the processed analyte downstream of the sample surface.

35. The method of claim 34 wherein analyzing the processed sample comprises analyzing the processed sample using mass spectrometry.

36. The method of claim 34 further comprising, prior to processing the sample:

inserting the sample surface into a fluid channel in a dispenser chip, wherein the sample surface is on a pillar;

depositing a liquid sample on the sample surface using the dispenser chip; and

binding an analyte in the liquid sample to the sample surface.

37. The method of claim 34 wherein processing comprises:

dispensing a reagent on the sample surface; and

cleaving the analyte into subunits.

38. A microfluidic chip comprising:

a body having a bottom surface; and

a plurality of vertical channels in the body, wherein each opening is cooperatively structured to receive a pillar of a sample chip.

39. The microfluidic chip of claim 38 wherein the body further comprises:

a plurality of horizontal delivery channels in communication with the plurality of vertical channels.

40. The microfluidic chip of claim 38 wherein the body further comprises:

a plurality of reservoirs upstream of the plurality of vertical fluid channels.

41. The microfluidic chip of claim 38 the body comprises silicon, glass, or polymeric materials.

42. The microfluidic chip of claim 38 wherein surfaces of the body forming each vertical channel are hydrophobic.

43. The microfluidic chip of claim 38 wherein surfaces of the body forming each vertical channel are hydrophilic.

44. A method of processing analytes, the method comprising:

inserting a plurality of sample surfaces into a plurality of vertical channels in a dispenser chip, wherein the plurality of sample surfaces are on pillars of a sample chip;

depositing a plurality of liquid samples on the sample surfaces while the sample surfaces are in the vertical fluid channels;

binding analytes from the plurality of liquid samples to the sample surfaces;

withdrawing the sample surfaces from the vertical fluid channels;

inserting the plurality of sample surfaces into a plurality of openings in a microanalysis chip so that the plurality of sample surfaces are in communication with a plurality of transfer-separation channels in the microanalysis chip; and

processing the analytes using reagents flowing through the transfer-separation channels while the analytes are bound to the sample surfaces.

45. The method of claim 44 further comprising:

discharging the processed analytes from the microanalysis chip using a plurality of nozzles in the microfluidic chip.

46. The method of claim 44 further comprising:

transferring the processed analytes to a mass spectrometer.

47. The method of claim 44 wherein the analytes are proteins, DNA, or RNA.

48. The method of claim 44 wherein processing includes at least one of derivatizing, cleaving, or unfolding the analyte.

49. The method of claim 44 wherein each vertical fluid channel comprises a passive valve.

50. The method of claim 44 wherein each pillar has an aspect ratio greater than about 1.

51. The method of claim 44 further comprising:

performing a chromatography process on the processed analytes.

52. The method of claim 44 further comprising:

separating the processed analytes from the sample surfaces; and

transferring the processed analytes downstream of the sample surfaces in the transfer-separation channels.

53. A system for analyzing analytes, the system comprising:

an analysis assembly comprising (i) a microanalysis chip comprising a body comprising at least one transfer-separation channel defined by a channel bottom having a bottom opening, the transfer-separation channel terminating in a discharge aperture, and (ii) a sample chip having a plurality of sample surfaces; and

an analysis device adapted to receive an analyte from the discharge aperture.

54. The system of claim 53 wherein the analysis device is a mass spectrometer.

55. The system of claim 53 wherein the sample surfaces are on pillars.